

editorial

Support the Communications Revolution!

The American Institute of Physics and its member societies are midway through a ten-year program that is a communications revolution in physics. As physicists might expect, this revolution involves the single, most important communications mechanism of physicists, the primary journal; by the end of the next five years the methods of producing the journals published by AIP for itself and its societies will have been revolutionized. More importantly perhaps, many new products will have become available through which the users of physics research results, readers as well as authors, will be effectively served. In the opinion of many, these changes will greatly benefit society members both economically and professionally. To convert opinion to fact, you, the members, need to become familiar with the nature and opportunities of the "Revolution" and give it your active support. The following brief report is directed towards that end.

In the past, the treatment of the primary journals as separate entities was carried to the ultimate. Despite the very low price per page to members, the large number of pages published each year made total cost to individual subscribers large; furthermore, continued fine tuning along conventional lines no longer served to improve the speed and cost of publication. Replacement of journals by *ad hoc*, non-public, expensive, non-refereed, and highly specialized report literature such as preprint reports was even being proposed. It had become apparent that a completely new approach to journal production, a "Revolution," would be necessary if the journals were to remain financially viable and the principal communications mechanism of physicists.

The new approach has been to couple, coordinate, standardize and computerize journal production at AIP without sacrificing the individuality of the cooperating journals. The steps taken in this approach have been intricate, for they relate to many journals, each with different communications requirements and different alternatives for improvements. Thanks to the cooperation of editors, society officers, members of AIP's information-program Advisory Committee and of AIP's Publication Board, the job of coupling and coordinating journal production through the use of common indexing schemes, common formats and common production techniques is nearly completed. We are now starting to see the results.

Based on these accomplishments, our first immediate goal is to keyboard and produce a semimonthly computer tape with an abbreviated description of every article in every one of the 35 journals AIP presently publishes. Keyboarding the material on this tape, called SPIN, is becoming an integral part of journal production, since the print type for the head of each journal article (title, authors, institution, abstract text and indexing terms) and tail of each article (footnotes and citations) will be set directly from this computer tape.

A second immediate goal is to produce semimonthly filmstrips of the master photographic negatives used to produce printing plates for article pages. In place of the 100 000 separate negatives now produced annually (one for each page published by AIP) we will have a filmstrip master that can be used for producing both photo-offset plates for printing the primary journals and microform copies in

either the regular sequence of pages or a repackaged sequence.

The result of the two-tape technology when fully implemented will be to produce the computer tape (SPIN) and a corresponding filmstrip negative master and make both available before the primary journals are actually published by AIP. Duplicates of the two tapes could, in principle, be distributed inexpensively, widely and rapidly under special arrangements with AIP and its societies. Production of the two tapes will make AIP a micropublisher as well as a publisher. Microfilm, microfiche, and microprint editions of journals will then be made practicable along with the regular printed editions.

One primary, long-range goal of modernized, coupled and coordinated production of primary journals is certainly the obvious one of economy, since significant decreases in production costs of journal products should result. The absolute effect of even small percentages can be appreciated from the size of the average annual AIP typesetting bill of about \$4 million. Similarly, for our printing bill of \$2 million, small percentage savings are important.

Another long-range goal of particular importance to the user is the development of many more communications options than in the past. Not only will the physicist be able to receive:

- ▶ Complete regular journals as at present but with common indexing of physics in all AIP and Society journals,
 - ▶ Current Physics Information products including:
 - a. advance abstracts journals (*Current Physics Advance Abstracts* CPAA)
 - b. titles journals (*Current Physics Titles* CPT)
 - c. computer tapes (*Searchable Physics Information Notices* SPIN)
 - d. microforms (*Current Physics Microforms* CPM),
- but he will also be able to receive:

- ▶ Customized and timely "user journals" (repackaged from original journals) in subject areas, such as superconductivity or environmental physics where AIP or Society journals presently do not exist,
- ▶ Timely reprints of any individual article,
- ▶ Inexpensive, complete sets (or selected sets) in microfiche format of all articles in AIP and Society journals.

Authors, obviously, will benefit from these innovations, for their articles appearing in the journals will be the very backbone of the entire system. Society officers and editors also will benefit because their journals will remain viable and important communications mechanisms. But primarily the changes were designed to benefit the reader-user. The question is, will you, the user, now step forward to take advantage of these benefits? Will you support these most important changes in the primary journals by subscribing to the new options becoming available to you? Will you volunteer your ideas and provide your support in the development of new options? Will you encourage your Society to participate in all aspects of the AIP program? The "Communications Revolution" can not succeed without your help. Now is the time to join up!

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